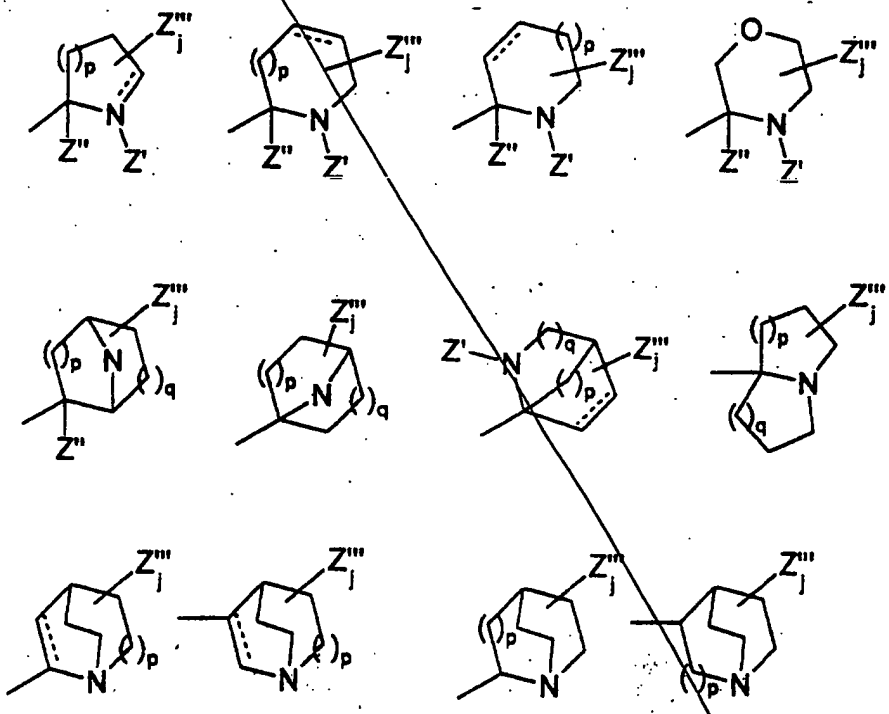
that the sum of m plus n is 0, 1, 2 or 3; E, E^{I}, E^{II} and E^{III} individually represent hydrogen or a suitable non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; and Q is selected from:

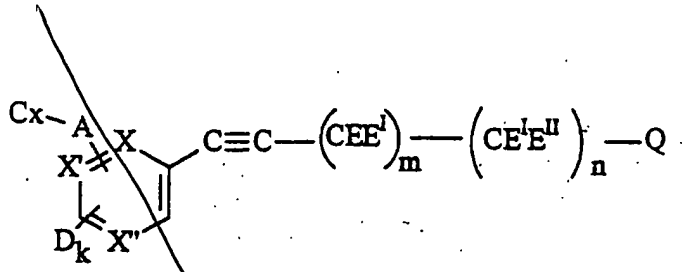


where Z' represents hydrogen or lower alkyl, acyl, alkoxycarbonyl, or aryloxycarbonyl; Z" is hydrogen or lower alkyl; and Z''' is a non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; the dotted line indicates a carbon-carbon single bond or a carbon-carbon double bond, p is 0, 1 or 2; q is 0, 1, 2 or 3; and j is an integer from 0 to 3.

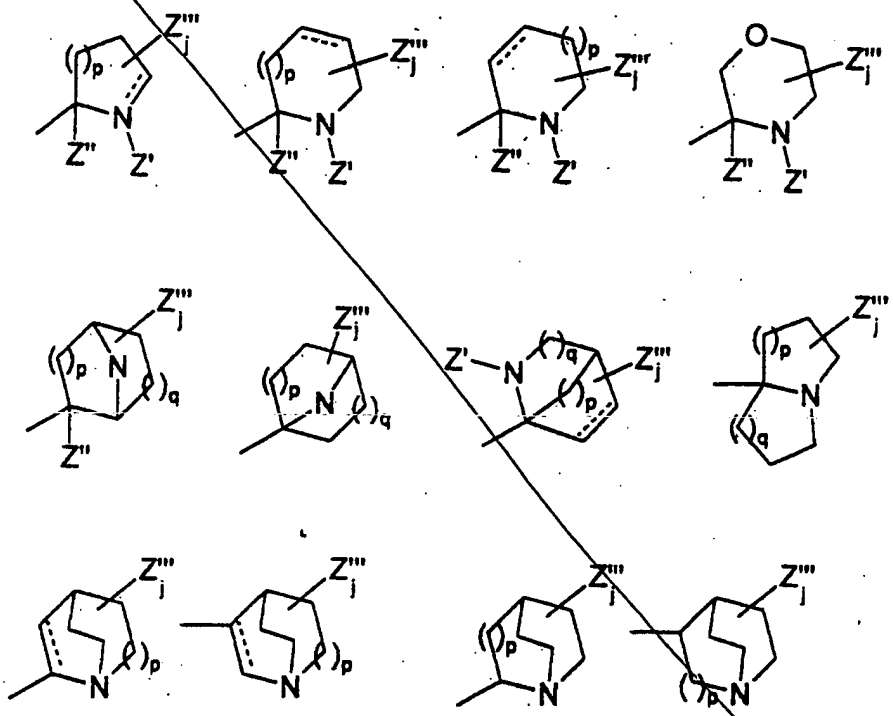
2. (Amended) The compound of Claim 1 wherein X' is COR' where R' is selected from the group consisting of aryl, substituted aryl, heteroaryl, substituted heteroaryl, non-aromatic heterocyclyl, substituted non-aromatic heterocyclyl, non-aromatic heterocyclylalkyl and substituted non-aromatic heterocyclylalkyl.

3. (Amended) The compound of Claim 2 wherein R' is phenyl or substituted phenyl.

16. (Amended) A compound of the formula:



where X" is nitrogen, X and X' are individually carbon bonded to a substituent species selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl; arylalkyl, substituted arylalkyl, halo, -OR', -NR'R", $-CF_3$, -CN, $-NO_2$, $-C_2R'$, -SR', $-N_3$, C(=O)NR'R", -NR'C(=O)R", -C(=O)R', -C(=O)OR', -OC(=O)R', $-O(CR'R")_rC(=O)R'$, $-O(CR'R")_rNR'R"$ $-O(CR'R")_rNR"C(=O)R'$, $-O(CR'R")_rNR"SO_2R'$, -OC(=O)NR'R", -NR'C(=O)O R", $-SO_2R'$, $-SO_2NR'R"$, and $-NR'SO_2R"$, where R' and R" are individually hydrogen, lower alkyl, cycloalkyl, heterocyclyl, or an aromatic group-containing species and r is an integer from 1 to 6, or R' and R" can together form a cycloalkyl functionality; A is O, C=O or a covalent bond; D is a suitable non-hydrogen substituent species selected from the group of substituent species for X, X' and X"; k is 0, 1 or 2; Cx is selected from a group consisting of aryl, substituted aryl, heteroaryl, substituted heteroaryl, non-aromatic heterocyclyl, substituted non-aromatic heterocyclyl, non-aromatic heterocyclylalkyl and substituted non-aromatic heterocyclylalkyl; m is an integer and n is an integer such that the sum of m plus n is 0, 1, 2 or 3; E, E^I, E^{II} and E^{III} individually represent hydrogen or a suitable non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; and Q is selected from:

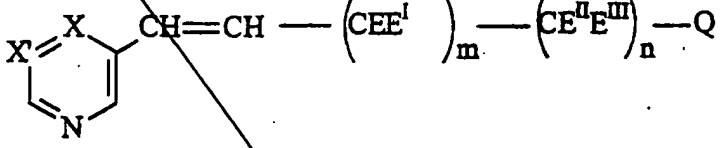


where Z' represents hydrogen or lower alkyl, acyl, alkoxycarbonyl, or aryloxycarbonyl; Z" is hydrogen or lower alkyl; and Z''' is a non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; the dotted line indicates a carbon-carbon single bond or a carbon-carbon double bond; p is 0, 1 or 2; q is 0, 1, 2 or 3; and j is an integer from 0 to 3.

22. (Amended) The compound of Claim 16 wherein X' is COR' where R' is selected from the group consisting of aryl, substituted aryl, heteroaryl, substituted heteroaryl, non-aromatic heterocyclyl, substituted non-aromatic heterocyclyl, non-aromatic heterocyclylalkyl and substituted non-aromatic hetero-cyclylalkyl.

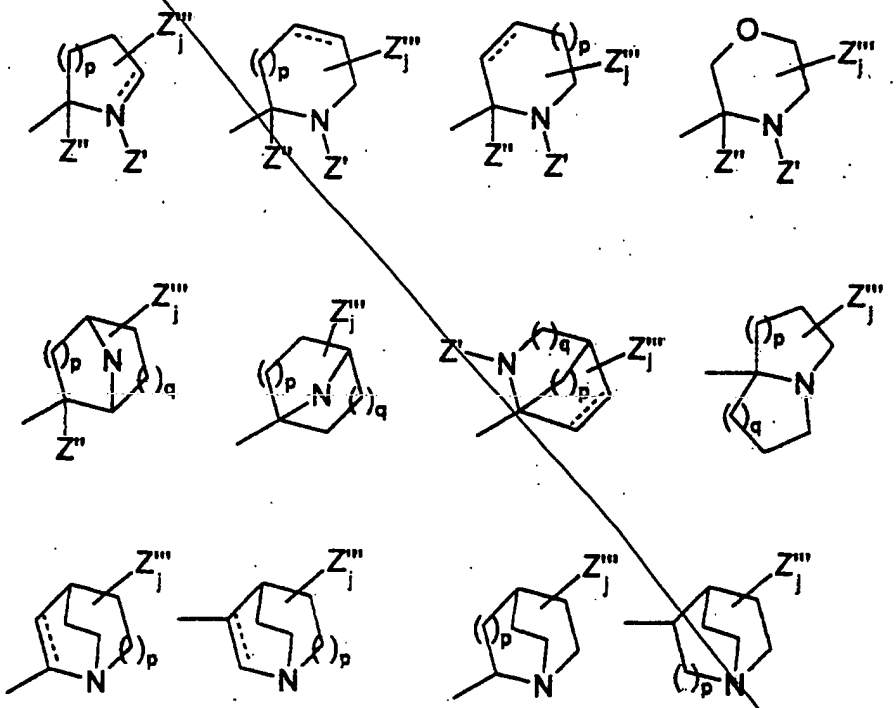
24. (Amended) The compound of claim 16 selected from the group consisting of (S)-5-(2-pyrrolidin-2-ylethynyl)pyridine, (R)-5-(2-pyrrolidin-2-ylethynyl)pyridine, (S)-3-isopropoxy-5-(pyrrolidin-2-ylethynyl)pyridine, (S)-3-phenyl-5-(pyrrolidin-2-ylethynyl)pyridine, (S)-3-phenoxyphenyl-5-(pyrrolidin-2-ylethynyl)pyridine, (S)-3-(4-methoxyphenyl)-5-(pyrrolidin-2-ylethynyl)pyridine, (S)-3-(4-hydroxyphenyl)-5-(pyrrolidin-2-ylethynyl)pyridine, (S)-3-cyclopentyloxy-5-(pyrrolidin-2-ylethynyl)pyridine, (S)-3-cyclohexyloxy-5-(pyrrolidin-2-ylethynyl)pyridine, (S)-3-(4-pyrrolidine-1-sulfonyl)phenoxy-5-(pyrrolidin-2-ylethynyl)pyridine, (S)-3-pyridyloxy-5-(pyrrolidin-2-ylethynyl)pyridine, (S)-3-pyrrolidin-2-ylethynyl)-5-(tetrahydropyran-4-yloxy)pyridine and (S)-3-(3,5-dihydroxy)phenoxy-5-(pyrrolidin-2-ylethynyl)pyridine.

25. (Amended) A pharmaceutical composition incorporating a compound of



where each of X and X' are individually carbon bonded to a substituent species selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl; arylalkyl, substituted arylalkyl, halo, -OR', -NR'R", -CF_3, -CN, -NO_2, -C_2R', -SR', -N_3, C(=O)NR'R", -NR'C(=O)R", -C(=O)R', -C(=O)OR', -OC(=O)R', -O(CR'R")$_r$C(=O)R', -O(CR'R")$_r$NR'R" -O(CR'R")$_r$NR"C(=O)R', -O(CR'R")$_r$NR"SO_2R', -OC(=O)NR'R", -NR'C(=O)OR", -SO_2R', -SO_2NR'R", and -NR'SO_2R", where R' and R" are individually hydrogen, lower alkyl, cycloalkyl, heterocyclyl, or an aromatic group-containing species and r is an integer from 1 to 6, or R' and R" can together form a cycloalkyl functionality; m is an integer and n is an integer such that the sum of m plus n is 0, 1, 2 or 3; E, E^I, E^{II} and E^{III} individually represent hydrogen or a suitable non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; and Q is selected from:

Sub B3



A4

where Z' represents hydrogen or lower alkyl, acyl, alkoxycarbonyl, or aryloxycarbonyl; Z" is hydrogen or lower alkyl; and Z"' is a non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; the dotted line indicates a carbon-carbon single bond or a carbon-carbon double bond; p is 0, 1 or 2; q is 0, 1, 2 or 3; and j is an integer from 0 to 3.

26. (Amended) The pharmaceutical composition of Claim 25 wherein X' is COR' where R' is selected from the group consisting of aryl, substituted aryl, heteroaryl, substituted heteroaryl, non-aromatic heterocyclyl, substituted non-aromatic heterocyclyl, non-aromatic heterocyclylalkyl and substituted non-aromatic heterocyclylalkyl.

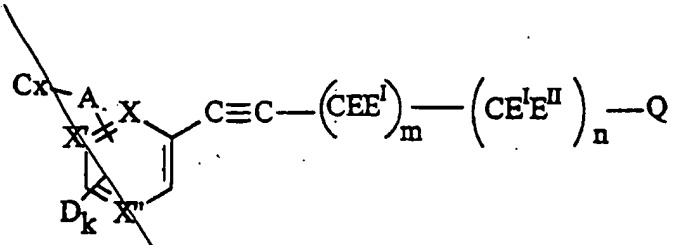
27. (Amended) The pharmaceutical composition of Claim 26 wherein R' is phenyl or substituted phenyl.

41. (Amended) A pharmaceutical composition incorporating a compound of the formula:

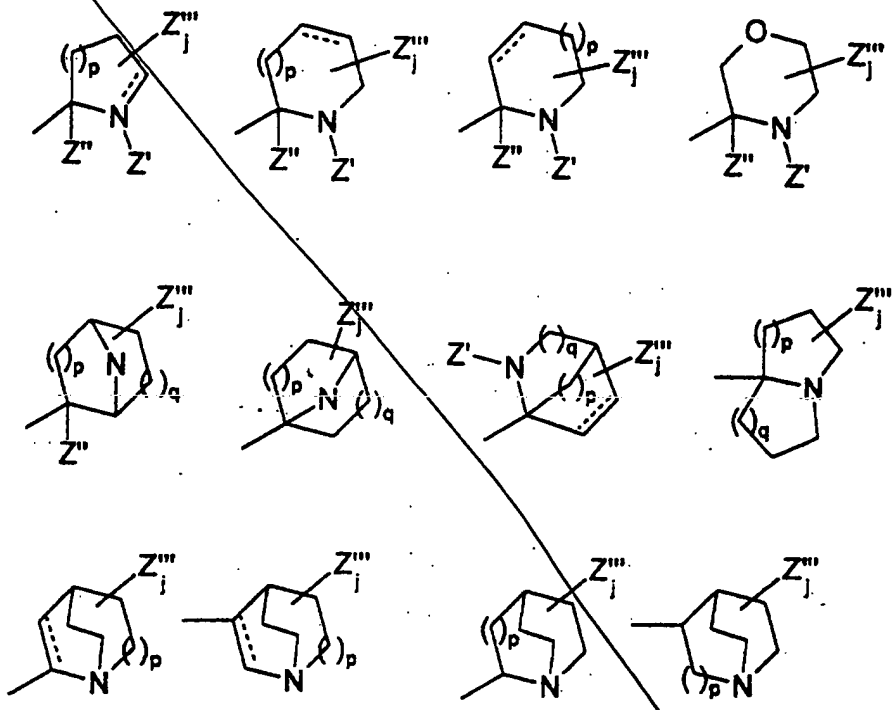
A5

Sub B4

Examiner: V. Balasubramanian
Group Art Unit: 1624



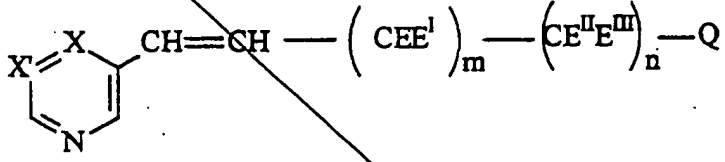
where X" is nitrogen and X and X' are individually carbon bonded to a substituent species selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl; arylalkyl, substituted arylalkyl, halo, -OR', -NR'R", $-CF_3$, -CN, $-NO_2$, $-C_2R'$, -SR', $-N_3$, C(=O)NR'R", -NR'C(=O)R", -C(=O)R', -C(=O)OR', -OC(=O)R', -O(CR'R")$_r$C(=O)R', -O(CR'R")$_r$NR'R" -O(CR'R")$_r$NR"C(=O)R', -O(CR'R")$_r$NR"SO_2R', -OC(=O)NR'R", -NR'C(=O)O R", $-SO_2$R', $-SO_2$NR'R", and -NR'SO_2R", where R' and R" are individually hydrogen, lower alkyl, cycloalkyl, heterocyclyl, or an aromatic group-containing species and r is an integer from 1 to 6, or R' and R" can together form a cycloalkyl functionality; A is O, C=O or a covalent bond; D is a suitable non-hydrogen substituent species selected from the group of substituent species for X, X' and X"; k is 0, 1 or 2; Cx is selected from a group consisting of aryl, substituted aryl, heteroaryl, substituted heteroaryl, non-aromatic heterocyclyl, substituted non-aromatic heterocyclyl, non-aromatic heterocyclylalkyl and substituted non-aromatic hetero-cyclylalkyl; m is an integer and n is an integer such that the sum of m plus n is 0, 1, 2 or 3; E, E^I, E^{II} and E^{III} individually represent hydrogen or a suitable non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; and Q is selected from:



where Z' represents hydrogen or lower alkyl, acyl, alkoxycarbonyl, or aryloxycarbonyl; Z" is hydrogen or lower alkyl; arid Z''' is a non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; the dotted line indicates a carbon-carbon single bond or a carbon-carbon double bond; p is 0, 1 or 2; q is 0, 1, 2 or 3; and j is an integer from 0 to 3.

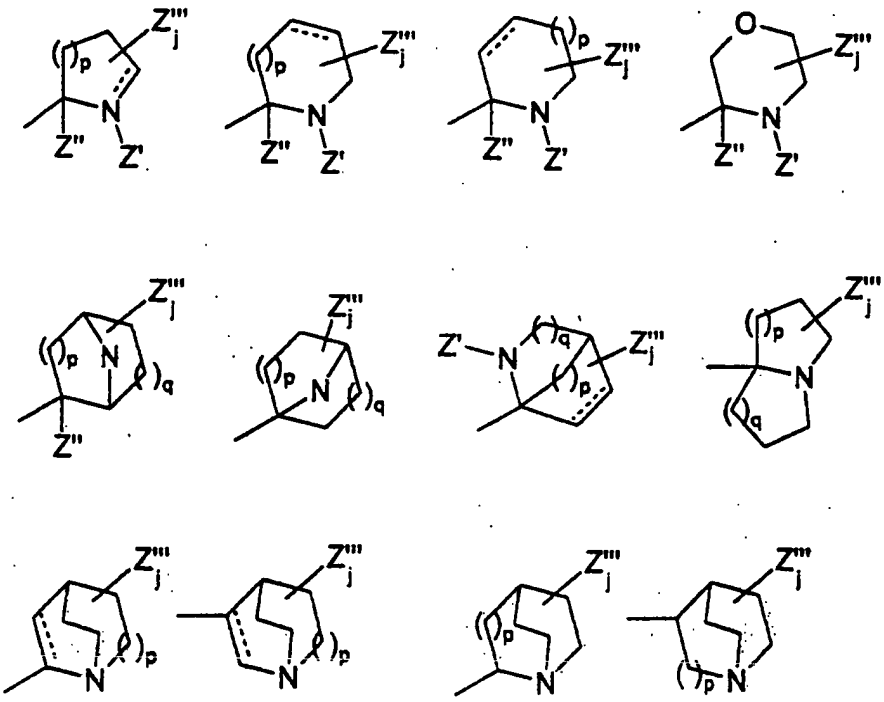
48. (Amended) The pharmaceutical composition of Claim 41 wherein X' is COR' where R' is selected from the group consisting of aryl, substituted aryl, heteroaryl, substituted heteroaryl, non-aromatic heterocyclyl, substituted non-aromatic heterocyclyl, non-aromatic heterocyclylalkyl and substituted non-aromatic hetero-cyclylalkyl.

51. (Amended) A method for treating a central nervous system disorder, said method comprising administering an effective amount of a compound having the formula:



where each of X and X' are individually carbon bonded to a substituent species selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, alkylaryl,

substituted alkylaryl; arylalkyl, substituted arylalkyl, halo, -OR', -NR'R", $-CF_3$, -CN, $-NO_2$, $-C_2R'$, -SR', $-N_3$, C(=O)NR'R", -NR'C(=O)R", -C(=O)R', -C(=O)OR', -OC(=O)R', $-O(CR'R")_rC(=O)R'$, $-O(CR'R")_rNR'R"$ $-O(CR'R")_rNR"C(=O)R'$, $-O(CR'R")_rNR"SO_2R'$, -OC(=O)NR'R", -NR'C(=O)O R", $-SO_2R'$, $-SO_2NR'R"$, and $-NR'SO_2R"$, where R' and R" are individually hydrogen, lower alkyl, cycloalkyl, heterocyclyl, or an aromatic group-containing species and r is an integer from 1 to 6, or R' and R" can together form a cycloalkyl functionality; m is an integer and n is an integer such that the sum of m plus n is 0, 1, 2 or 3; E, E^I, E^{II} and E^{III} individually represent hydrogen or a suitable non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; and Q is selected from:



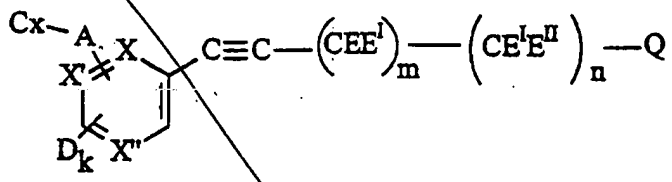
where Z' is hydrogen, lower alkyl, acyl, alkoxycarbonyl, or aryloxycarbonyl; Z" is hydrogen or lower alkyl; and Z"' is a non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; the dotted line indicates a carbon-carbon single bond or a carbon-carbon double bond; p is 0, 1 or 2; q is 0, 1, 2 or 3; and j is an integer from 0 to 3.

52. (Amended) The method of Claim 51 wherein X' is COR' where R' is selected from the group consisting of aryl, substituted aryl, heteroaryl, substituted heteroaryl, non-aromatic

A7 heterocyclyl, substituted non-aromatic heterocyclyl, non-aromatic heterocyclylalkyl and substituted non-aromatic heterocyclylalkyl.

53. (Amended) The method of Claim 51 wherein R' is phenyl or substituted phenyl.

66. (Amended) A method for treating a central nervous system disorder, said method comprising of the administration of an effective amount of a compound having the formula:



A8 where X" is nitrogen, X and X' are individually carbon bonded to a substituent species selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl; arylalkyl, substituted arylalkyl, halo, -OR', -NR'R", $-CF_3$, -CN, $-NO_2$, $-C_2R'$, -SR', $-N_3$, C(=O)NR'R", -NR'C(=O)R", -C(=O)R', -C(=O)OR', -OC(=O)R', $-O(CR'R")_rC(=O)R'$, $-O(CR'R")_rNR'R"$ $-O(CR'R")_rNR"C(=O)R'$, $-O(CR'R")_rNR"SO_2R'$, -OC(=O)NR'R", -NR'C(=O)O R", $-SO_2R'$, $-SO_2NR'R"$, and $-NR'SO_2R"$, where R' and R" are individually hydrogen, lower alkyl, cycloalkyl, heterocyclyl, or an aromatic group-containing species and r is an integer from 1 to 6, or R' and R" can together form a cycloalkyl functionality; A is O, C=O or a covalent bond; D is a suitable non-hydrogen substituent species selected from the group of substituent species for X, X' and X"; k is 0, 1 or 2; Cx is selected from a group consisting of aryl, substituted aryl, heteroaryl, substituted heteroaryl, non-aromatic heterocyclyl, substituted non-aromatic heterocyclyl, non-aromatic heterocyclylalkyl and substituted non-aromatic hetero-cyclylalkyl; m is an integer and n is an integer such that the sum of m plus n is 0, 1, 2 or 3; E, E^I, E^{II} and E^{III} individually represent hydrogen or a suitable non-hydrogen substituent selected from the group consisting of alkyl, substituted alkyl, halo-substituted alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl and substituted arylalkyl; and Q is selected from:

SUB B6